

GEO 2200/4200 – Geospatial Data Acquisition & Management			
Student Learning Objective	GTCM (2014)		
	Tier Number	Subdivision	Comments
Unit 1: An Introduction to Geospatial Data Collection			
Describe how field data is collected	Tier 4, Tier 5	4.1: Core geospatial abilities and knowledge (Positioning Systems) 5.1: Positioning and Data Acquisition	
Describe how to digitally convert an analog map into georeferenced raster	Tier 4	4.1: Core Geospatial abilities and knowledge (Geospatial Data)	
Describe how to construct a spatial feature class from point data.	Tier 4	4.1	
Unit 2: Fundamentals of Positional Accuracy Assessment			
Describe the key methods used to perform positional accuracy assessment of data collected using a GNSS instrument	Tier 4, Tier 5	4.1, 5.1	
Identify the issues related to a valid accuracy assessment for different instruments	Tier 4, Tier 5	4.1, 5.1	
Unit 3: Basic Geospatial Data Collection and Storage Methods using GPS			
Develop a plan to successfully collect field data using GPS	Tier 5	5.1	
Demonstrate how to create a data dictionary for collecting field data	Tier 4	4.1 (Positioning Systems)	
Demonstrate basic proficiency in collecting, downloading and organizing geospatial data using mapping grade GPS units and geospatial software	Tier 4	4.1	
Demonstrate basic skills on accessing and using GPS-based data in a geodatabase or other data model.	Tier 4	4.1: (Data Modeling)	
Unit 3: Advanced Geospatial Data Collection using the GNSS			
Discuss the specific aspects and procedures related to collecting high-accuracy decimeter level field data using a GNSS.	Tier 5	5.1	
Explain when sub-meter accuracy data collection is most appropriate and when a coarser level of accuracy is sufficient for field data collection.	Tier 5	5.1	
Demonstrate basic proficiency in collecting, downloading and organizing geospatial data using sub-meter accuracy GNSS units and geospatial software	Tier 5	5.1	
Perform GNSS data post-processing	Tier 5	5.1	
Unit 4: Basic Unmanned Aerial Systems (UAS) fundamentals			
Explore the capabilities of drones and software for geospatial applications	Tier 4	4.1 (Remote Sensing and Photogrammetry)	
Describe the FAA Part 107 drone pilot license process and basic drone flight operations.	Tier 3	3.5 (Working with Tools and Technology)	
Identify the major components needed to successfully collect and evaluate geospatial data using drone technology	Tier 4	4.1	
Demonstrate basic proficiency with processing UAV-captured data to generate surface layers.	Tier 4	4.1	
Unit 5: Introduction to Other Geospatial Field Instruments			
Describe how to use various additional field equipment (e.g., laser rangefinder, ground control targets, and digital camera)	Tier 4, Tier 5	4.1, 5.1	
Demonstrate basic proficiency in operating field equipment	Tier 3, Tier 4, Tier 5	3.5, 4.1, 5.1	
Unit 6: How to Conduct a Geospatial Project Field Campaign			
Develop a detailed plan to collect field data, to include equipment, methods, and assessment strategy.	Tier 2, Tier 5	2.2 (Writing), 5.1	
Evaluate another student's plan	Tier 2	2.7 (Critical & Analytical Thinking)	
Update detailed plan based on student evaluation and class discussion	Tier 2	2.6 (Communication - Listening & Speaking)	
Unit 7: Geospatial Field Project			
Students will apply their geospatial project field campaign plan and best practices using geospatial field instruments and software with the goal of collecting data to generate a 3D surface and assess its accuracy using accepted techniques.	Tier 3, Tier 4, Tier 5	3.3 (Planning & Organizing) , 3.4 (Problem Solving/Decision Making), 3.5 (Working with Tools & Technology) , 4.1, 5.1	
This work is licensed under CC BY 4.0. To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0			